



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/524,417	02/14/2005	Hiromitsu Takeda	050034	4544
23850 7590 12/31/2007 KRATZ, QUINTOS & HANSON, LLP 1420 K Street, N.W. Suite 400 WASHINGTON, DC 20005			EXAMINER JOY, DAVID J	
			ART UNIT 1794	PAPER NUMBER
			MAIL DATE 12/31/2007	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/524,417

Applicant(s)

TAKEDA ET AL.

Examiner

David J. Joy

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-8 are pending, with no amendments having been made to the claims in the amendment filed on October 2, 2007.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

3. Claims 1-8 stand rejected under 35 U.S.C. 103(a) as being unpatentable over the U.S. Patent of Strickler et al. (6,858,306; hereinafter "Strickler"), in view of the U.S. Patent of Oliver et al. (4,797,317; hereinafter "Oliver").
4. Strickler teaches a visible light absorbing film formed by coating one or both sides of a substrate which has solar radiation reflecting properties and whose visible light reflectance is 10% or more (see Abstract; see also Figure 2; see also Column 2, Lines 14-24). Strickler specifically teaches that the coated glass article has a visible light transmittance of 63% or more, but Oliver recites that a light transmission on the order of 20-30%, for example, implies reflectivity of 70-80% (see Column 2, Lines 67-68).

Therefore, it follows that the coated article of Strickler can be deemed as having a visible light reflectance of 10% or more. Additionally, Strickler teaches that the coated article exhibits both a reduction in both the visible light reflectance and the solar radiation reflectance (see Column 6, Lines 28-56). Specifically, Strickler teaches that the visible light transmittance of the coated glass article is 59% or more. Therefore, it follows that coated article can be deemed as having a degree of reduction of visible light reflectance that is 0.9 or less (*Id.*). Likewise, Strickler teaches that the total solar heat transmittance of the coated glass article is 48% or less (*Id.*). Therefore, it follows that the coated article can be deemed as having a degree of reduction of solar radiation reflectance that is 0.25 or more. As a basic principle, whatever light is not transmitted through a coated article is going to be reflected (or a portion of that light will be reflected). As Strickler teaches the transmittance, it is reasonable to conclude that a skilled artisan could calculate the amount of light that is reflected. Also, the coated article exhibits a haze value that has been made higher than the haze value before formation of the visible light absorbing film and its gain is +3% or less; specifically, the coated article exhibits a haze of less than 0.8% (see Column 5, Lines 20-30).

5. Strickler teaches that the coated article has a c^* value of 40 or less. In particular, Strickler recites that the article has an a^* value of about 5 to about -5 and a b^* value of

about 5 to about -5, as defined on the CIELAB color scale system (see Column 5, Lines 20-30). Consequently, using the chromaticness formula claimed in the instant application, it follows that these a^* and b^* values result in the claimed c^* value.

Strickler also teaches that the substrate is a glass sheet on which a metallic thin film has been formed (see Figure 2), and that the coating is incorporated directly or via an intervenient member or via a space (*Id.*).

6. Strickler is silent as to some of the specifics of the coated article. Most notably, Strickler fails to teach the nature of the metallic thin film as well as the specific contents of the tinted film. However, Oliver, drawn a solar control window film, teaches a composite film sheet laminated to a glass substrate (see Abstract), with the film sheet being a polymeric film onto which a metallic thin film of aluminum has been vacuum-deposited (see Column 3, Line 65 – Column 4, Line 2; see also Column 6, Lines 52-54), and additionally, the film sheet can contain a carbon black pigment and a binder (see Column 4, Lines 3-14). Similarly, Oliver recites that the window film has a visible light reflectance of 10% or more (see Abstract; see also Column 3, Lines 29-42). As both the Strickler reference and the Oliver reference are drawn to the same field of invention, it would have been obvious to a person having ordinary skill in the art at the time of

invention, to have made a visible light absorbing film composite with the claimed limitations as taught in the instant application.

7. Claims 4, 5 and 7 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Strickler, in view of Oliver, as applied to Claims 1-5 above, and further in view of the Japanese Patent Publication of Toshiharu et al. (JP 10-182190; hereinafter "Toshiharu").

8. Strickler, in view of Oliver, teaches a glass sheet on which a metallic thin film has been formed (with all of the claimed limitation as discussed hereinabove), and that the metallic thin film can be an aluminum compound. However, Toshiharu, drawn to a transparent black electroconductive film, recites that the metallic thin film layer can contain aluminum, copper, or silver (see ¶ [0021]). Additionally, Toshiharu teaches that the film can also contain a pigment particles, such as titanium black and carbon black (see ¶ [0026]). As the references of Strickler, Oliver and Toshiharu are all drawn to the same field of invention, it would have been obvious to a person having ordinary skill in the art at the time of invention, to have used any of the metallic thin film layer taught by Toshiharu.

9. Neither Strickler, Oliver nor Toshiharu shows that the pigment particles have an average dispersed-particle diameter of 300 nm or less in the ink, as in Claim 7.

However, such particle sizes are properties that can be easily determined by a person having ordinary skill in the art. With regard to the limitation of the particle size, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions fails to render claims patentable in the absence of unexpected results. The aforementioned limitations are optimizable as they directly affect the pigment layer of the visible light absorbing ink. It would have been obvious to a person having ordinary skill in the art, at the time of invention, to make the ink layer with the limitations of the pigment particle size since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 215 (CCPA 1980).

10. Claim 7 stands rejected under 35 U.S.C. 103(a) as being unpatentable over Strickler, in view of Oliver, as applied to Claims 1-5 above, and further in view of the Japanese Patent Publication of Masaaki et al. (JP 2000-238170; hereinafter "Masaaki").

11. Strickler, in view of Oliver, teaches a glass sheet on which a metallic thin film has been formed (with all of the claimed limitation as discussed hereinabove), and that the film layer can contain carbon black particles. Additionally, Masaaki, drawn to a transparent conductive film, provides that the film layer can additionally contain a dark-colored azo pigment (see ¶ [0016]). Since Strickler, Oliver and Masaaki are all drawn to the same field of invention, it would have been obvious to a person having ordinary skill in the art at the time of invention to have used the pigment taught by Masaaki.

12. Neither Strickler, Oliver nor Masaaki teaches that the pigment particles have an average dispersed-particle diameter of 300 nm or less in the ink, as in Claim 7. However, such particle sizes are properties that can be easily determined by a person having ordinary skill in the art. With regard to the limitation of the particle size, absent a showing of unexpected results, it is obvious to modify the conditions of a composition because they are merely the result of routine experimentation. The experimental modification of prior art in order to optimize operation conditions fails to render claims patentable in the absence of unexpected results. The aforementioned limitations are optimizable as they directly affect the pigment layer of the visible light absorbing ink. It would have been obvious to a person having ordinary skill in the art, at the time of

invention, to make the ink layer with the limitations of the pigment particle size since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 USPQ 215 (CCPA 1980).

Response to Arguments

13. Applicant's arguments filed on October 2, 2007 have been fully considered but they are not persuasive.

14. Applicant repeatedly argues that the limitation of Claim 1 requires that "a substrate which has solar radiation reflecting properties, whose visible light reflectance is 10% or more." However, as it is written in the instant application, the claim recites a "film formed by a visible light absorbing ink having been coated on one or both sides of a substrate which has solar radiation reflecting properties and whose visible light reflectance is 10% or more". However, the claim, as it is written, can be read in different ways. While Applicant is reading the claim such that it is the substrate which has solar radiation reflecting properties and whose visible light reflectance is 10% or more" one can also read the claim as having a film [formed by a visible light absorbing ink having been coated on one or both sides of a substrate] which has solar radiation reflecting properties and whose visible light reflectance is 10% or more (whereby the "which" and

"whose" clauses refer to the film, and not the substrate). Consequently, Examiner has construed the claim in such a way that is reasonable, given the plain text of the claim as it is presented, and found a reference that teaches the limitation of that claim, after having been so construed.

15. Applicant also argues that the coatings that are formed on the glass substrate in Strickler are different from the visible light absorbing film of the present invention which is formed by using a visible light absorbing ink. First of all, the claim is drawn to an article, so the process by which the article is formed shall not be given patentable weight in the article claim (if it were a process claim, then the manner by which it is formed carries a greater importance). As the claim was rejected over Strickler *in view of* Oliver, the two references must be taken together for the subject matter taught, and not dissected individually to point out where they are deficient. It is well-known in the art that an "ink" is defined as a colorant and some sort of vehicle for that colorant. Now, since we are dealing with an article claim, it is possible that the colorant remains on the article, while the vehicle that was essential in the process of applying the colorant has since dissipated (i.e., evaporated). Therefore, as long as a colorant remains, then it follows that the colorant can be deemed to be an ink. Now, in Oliver, the term "dye" is defined (in the Definitions, provided in Column 3, Lines 20-22) as including dyes

generally, pigments and transparent metal oxides". As Strickler teaches that the glass substrate has a coating of a tin oxide applied to the surface, it follows that for the coating can be construed to meet to limitation that the substrate has been coated on one or both of its sides with a colorant that, as far as the article that is produced is concerned, satisfies the requirement that is be coated with an ink.

16. Applicant further argues that Strickler fails to teach both the degree of reduction of visible light reflectance, and the degree of reduction of solar radiation reflectance. However, the recitation of these limitations has been addressed in the rejection that appears hereinabove.

17. Finally, Applicant argues that the teachings of Toshiharu and Masaaki are not sufficient to overcome the deficiency of the Strickler and/or Oliver, as they pertain to Claim 1. Given Examiner's construction of Claim 1, as discussed hereinabove, both Strickler and Oliver are still valid references, and the addition of Toshiharu and Masaaki are also valid for their stated purpose.

Conclusion

18. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

19. A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

20. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David J. Joy whose telephone number is (571) 272-9056. The examiner can normally be reached on Monday - Friday, 7:00 AM - 3:30 PM EST.

Application/Control Number:
10/524,417
Art Unit: 1794

Page 12

21. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Callie E. Shosho can be reached on (571) 272-1123. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

22. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

DJJ
12/14/2007

Callie Shosho
Callie Shosho
Supervisory Patent Examiner